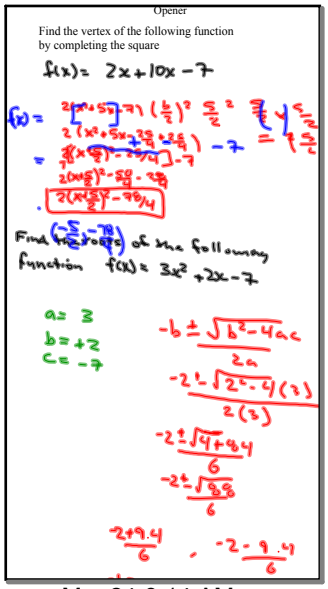
Opener

i) Find the vertex of the following function by completing the square

$f(x) = 2x^2 + 10x - 7$

ii) Find the roots of the following function $f(x) = 3x^2 + 2x - 7$

Mar 24-8:14 AM



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4.4 Discriminant p227

i) b^2-4ac = + ve value

2 real roots

ii) $b^2-4ac = 0$

1 real root

$x^2+6x+9=0$ $(x+3)=0$

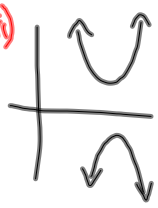
Perfect Squares

Mar 31-9:26 AM

4.4 p227

Discriminant

iii)



b^2-4ac = -ve

no solution

$\sqrt{b^2-4ac}$

no real roots

Mar 31-9:04 AM

Determine the # of roots for each equation

a) $4x^2-10x+5=0$

$D = b^2-4ac$

$a=4$ $= (-10)^2 - 4(4)(5)$

$b=-10$ $= 100 - 80$

$c=+5$ $= 20$

∴ 2 real roots

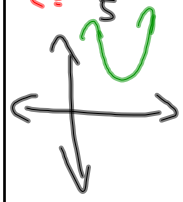
Mar 31-9:30 AM

ii) $3x^2 + 5 = 0$

$a = 3$

$b = 0$

$c = 5$



$D = b^2-4ac$

$= 0^2 - 4(3)(5)$

$= 0 - 60$

$= -60$

No Real Roots

Mar 31-9:35 AM

For what value of k does $2x^2 + 4x + k = 0$ have two distinct roots, one solution? and no solution?

$a = 2$

$b = 4$

$c = k = (?)$

one solution

$0 = b^2 - 4ac$

$0 = 4^2 - 4(2)(k)$

$0 = 16 - 8(k)$

$-16 = -8k$

$\frac{-16}{-8} = \frac{-8k}{-8}$

$2 = k$

$k > 2$ – no solutions

$k < 2$ – two solutions

$k = 2$ – one solution

Mar 31-9:37 AM

p232-233

Hwk

q 2, 4 (odds) 6, 7, 9, 13

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Mar 24-8:41 AM